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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/056,590      | 01/24/2002  | Tat Hung Tong        | VTN-576             | 4694             |

27777 7590 08/21/2003  
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EXAMINER

TESKIN, FRED M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1713

DATE MAILED: 08/21/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
10/056,590

Applicant(s)  
Tong

Examiner  
Fred Teskin

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1713



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on May 13, 2003
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11, 19, and 21-24 is/are allowed.
- 6) ☒ Claim(s) 1, 4-9, and 18 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 10, 12-17, and 20 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 5 6) ☐ Other:

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1. Amendments presented in the response of May 13, 2003 are acknowledged and deemed to obviate the objection to the disclosure and the § 112/2d paragraph rejection as set out in paper no. 4. Claims 1-24 are currently pending and under examination.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4-9 and 18 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Kuyama et al 3383336.

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The basis of the rejection is adequately set forth in the prior Office action (paper no. 4, pp. 3-5) and that explanation is incorporated herein by reference. The reference to Tsuno is dropped in view of the amendment to claim 1 specifying "about 0.5 to about 5 % by weight" of a multifunctional crosslinking agent.

Further with respect to the claimed amount of crosslinking agent, examiner notes that Kuyama et al, in Example 9, demonstrates the preparation of resinous copolymer particles from a reaction mixture containing 121.6 g styrene, 4.8 g ethylvinylbenzene, 3.0 g acrylonitrile, 5.2 g divinylbenzene and 1.0 g benzoyl peroxide as initiator (col. 9, lines 40+). Divinylbenzene is, of course, a species of crosslinking agent within claim 1; and from the reported quantities of monomers and initiator, its percentage is calculated to be 3.83 % by weight  $[(5.2/(121.6 + 4.8 + 3.0 + 5.2 + 1)) \times 100]$  -- an amount well within the claimed range. And while two vinyl monomers other than styrene are used in Example 9, claim 1 has the open-ended transitional term "comprising" which does not exclude the presence of the other, unspecified vinyl compound (see MPEP 2111.03).

Thus, essentially all the compositional limitations recited in claim 1, as amended, are found in Example 9 of Kuyama et al. Since products of identical chemical compositions cannot have mutually

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exclusive properties, *In re Spada*, 15 USPQ2d 1655 (Fed. Cir. 1990), examiner stands by the conclusion that the "shape memory" property recited in claim 1 but not disclosed by Kuyama et al is inherent in the copolymer reaction product of at least Example 9 of this reference.

5. Applicant's arguments filed May 13, 2003 have been fully considered but they are not persuasive of error in the repeated rejection.

The argument to the effect that neither cited reference teaches or discloses a shape memory polymer has been addressed in the above discussion of Kuyama et al, vis-a-vis the added limitation of claim 1 concerning amount of multifunctional crosslinking agent. Because the copolymer of Kuyama et al, Example 9, comprises a reaction product in compliance with the compositional limitations of claim 1, that product is reasonably presumed to possess the same properties as applicant's polymer as claimed.

Applicant's additional assertion that "the references are directed to thermosetting polymers" (Response, p. 3) is based solely on a citation to the Tsuno reference regarding amount of crosslinking agent used. As noted above, Tsuno has been dropped.

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No portion of Kuyama et al is cited by applicant to support the noted assertion. Moreover, from the above discussion of Example 9, it is clear that Kuyama et al contemplate the use of an amount of multifunctional crosslinking agent within the range specified in claim 1. Applicant's explanation of why thermosetting polymer would not exhibit shape memory properties fails to directly address what appears to be the closest embodiment of this prior art reference.

6. Claims 2, 3, 10, 12-17 and 20 stand objected to as being dependent on a rejected base claim but would be allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claim.

7. Claims 11, 19 and 21-24 are allowable over the prior art of record.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the

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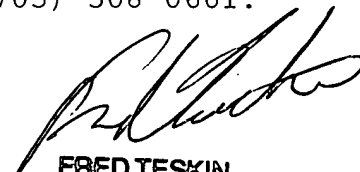
mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner F. M. Teskin whose telephone number is (703) 308-2456. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (703) 308-2450. The appropriate fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 (non-after finals) and (703) 872-9311 (after-finals).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

FMTeskin/08-16-03

  
FRED TESKIN  
PRIMARY EXAMINER  
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